

Summary of G896

Published Information

Part of the G896 sequence was first identified as an MSU EST (T45249). No published data is associated with G896. G896 encodes a member of the zinc finger family that is related to LSD-1

Mendel Discoveries

A knock-out mutant was isolated at Mendel, which contains a T-DNA insertion 40 base pairs downstream of the start codon. G896 knock-out plants are more susceptible to *Fusarium oxysporum*. In addition, G896 knockout plants have lower levels of lutein in seeds as compared to wild-type control plants (the data is in the process of being repeated). Otherwise, the knock-out plants have a wild-type morphological phenotype.

In wild-type plants, G896 is mostly expressed in roots. Changes in environmental conditions do not affect its expression. Given the disease and biochemical phenotypes of the knock-out plants, we would recommend overexpressing G896 and look for the opposite phenotypes in transgenic plants.

Closely Related Genes from Other Species

G896 is very similar to a peppermint EST (AW255156). Since the homology extends beyond the conserved domain, there is a chance the G896 and the mint gene are orthologues.

Utilities

Since G896 transgenic plants have an altered response to the fungal pathogen *Fusarium oxyporum*, the gene could be used to manipulate the defense response in order to generate pathogen-resistant plants.

References

Dietrich RA, Richberg MH, Schmidt R, Dean C, Dangl JL A novel zinc finger protein is encoded by the *Arabidopsis* LSD1 gene and functions as a negative regulator of plant cell death (1997) Cell 88(5):685-94

Keywords

Fusarium

Knockout Status

Homozygous KO plant identified

Collection Jack

Orientation 5LB

Insertion Point Gap 1

Insertion Point Offset in GenBank NID 62529 [33]1877523

Insertion Point ATG +258 ATG

Sequence

```
ACANGCACNATNTANGAAAACGANCTTTCATTTNATAATAACGCCGNGGACATNTACATT
NNNGANTTGAAAAAAATTGAGCTTTACTCTTTCTTTTTCATCGCATATTGACCACATTA
CTCCATGCTGATCCATGTNCGCTTTCCCGNACATGAAGCCATTTACACACTCAATATAT
CCTGCCANAGATCACGGCCCTCTTCTGCCATGTTCCGGGAGAGGCAGCTGACCGGCAGGC
GCGTGGATATGCATAGACGCTGATGGGACGCTGGAAGGTTGCTGAGGAGGCGCGACGCGA
GTGTAGCTGATATGAGTAACAGCATGTATTAGATCGCCTCTATTAGATCC
```

Scientist Bob Creelman

Contact Information Phone: (510) 264-0280 x109 Fax: (510) 264-0254

Email: rcreelm@mendelbio.com

•

•

Sequence of G896

CGAGGAAGAACTGATCCATATCGTATCCCGACCAAGCAAAACATGAGGATGGCATTGTA
TTGGCTCGTACAGGGATGCACAGCAGGCGACTCACTTGTCTCCACTACTCTGGTCATGG
TTCCGGTCAAAGAACTACAACGGTGATGAAGTTGATGGCTATGATGAAACACTCTGTCC
TCTGGATTTTGAAACTCAGGGGATGATTGTAGACGATGAGATCAACGCAACCATTGTACG
CCCTCTTCCACATGGTGTCAAGCTCCATTCAATTATCGATGCTTGCCATAGTGGTACCGT
TCTGGATTTACCTTCCTATGCAGAATGAACAGAGCTGGGCAGTATGTGTGGGAGGATCA
TCGGCTAGGTGAGTTTGTGGAAGGAAGTGGTGGGAGGCCATTTCATTAGTGG
ATGTGATGATGATCAGACTTCGGCCGACACATCAGCGCTGTGGAAGATCACGCTACGGG
TGCTATGACTTTCTGTTTTATTCAAGCAATTGAACGAGCGCACAAAGGCACAACCTATGG
AAGCCTTCTGAATTCTATGCGCACCACAATAAGGAATACAGGGAATGATGGTGGTGGTAG
TGGTGGAGTTGTGACGACTGTGCTGAGCATGCTTCTGACAGGGGGAAGTGGCATTTGGGG
ATTAAGACAGGAGCCTCAACTGACTGCTTGCCAAACATTGATGTCTATGCAAGCCTTT
CACTCTCTAGTAAAGGACAGTCACTTTTATGTATAGCGAGTGTGATTTGAGAATCCGT
CCATATAACCACCTTTTGTCTTATTTTTATTTTTCTTTCAAAGAATAAAGGAAAACA
TTGATTTGGTGATTCTG

Genomic Sequence

>G896 Genomic Sequence

ATGTACCCGCCACCTCCCTCAAGCATCTACGCTCCTCCGATGCTGGTGAATTCCTCCGGT
TGCCGGACGCTCTCCAGCTTCGGCCGACACATCAGCGCTGTGGAAGATCACGCTACGGG
GCTGTTACTCATATCGCCGACCCTCGCACCAGCCCTCCTCCGCAACCTTCCTCCGCCCT
TCTCCGCTCCCAAAATCCACGCGCTCCCGGTGAGTGCCTCACCCCATGGCAGGAAG
AGGGCCGTGATCTGTGGCATCTCGTATCGTTTCTCTGCCACGAGCTCAAAGGCTGCATC
AACGACGCCAAGTGATGCTGCTCACCCTTCTCATCAACAAATTCAAATTTCTCCCGAGTTCA
ATTCTCATGCTTACCGGTACAGAGTATTTCTATCTTTTCAAATGCCTATGTTGCTACTA
TACTACTATTCCTTGGATTTTGAATACAATTTTCTTGGCTCTTCAATCTGATAAACAC
ACATTCCAAGTTACCATTTCGAACCACTTTGATAAAAAATGTGTTGCATTCCATAGCTGAC
TAACTAATTGTTTCATCATGGATGGTTTTTCATTCTCAGAGGAAGAAACTGATCCATATCGT
ATCCCGACCAAGCAAAACATGAGGATGGCATTGTATTGGCTCGTACAGGGATGCACAGCA
GGCGACTCACTTGTCTTCCACTACTCTGGTCATGGTTCGCGTCAAAGAAACTACAACGGT
GATGAAGTTGATGGCTATGATGAAACACTCTGTCTCTGGATTTTGAAGTCAAGGGATG
ATTGTAGACGATGAGATCAACGCAACCATTGTACGCCCTTCCACATGGTGTCAAGCTC
CATTCAAATATCGATGCTTGCCATAGTGGTACCGTTCTGGATTTACCTTCCTATGCAGA
ATGAACAGGTTATTAGTCCCTCAACCGCTTCTAAAGGGATGTTGCTTACCTCTCTCGTT
ATATTTAACATACATCCATTTTCTTTTAAATTGAAACAGAGCTGGGCAGTATGTGTGGG
AGGATCATCGGCCTAGGTGAGTTTGTGGAAGGAAGTGGTGGGAGGCCATTTCAA
TTAGTGGATGTGATGATGATCAGACTTCGGCCGACACATCAGTAAGTAGAACGACTCTAA
TCATACGCTCTGCTGTTGATGTTGTTTCTCTCTCATGATTAAACACATACACAGGCG
CTGTGCAAGATCAGCTCTACGGGTGCTATGACTTCTGTTTTATTCAAGCAATTGAACGC
AGCGCACAAAGGCACAACCTATGGAAGCCTTCTGAATTCTATGCGCACCACAATAAGGAAT
ACAGGGAATGATGGTGGTGGTAGTGGTGGAGTTGTGACGACTGTGCTGAGCATGCTTCTG
ACAGGGGGAAGTGGCATTTGGGGGATTAAGACAGGTAAAAATCTTTCTTGTCTCTTGTGT
TGATACAGATCGATAAATGTTTCTTAAATCTGTTTTTACAGGAGCCTCAACTGACTG
CTTGCCAAACATTGATGTCTATGCAAGCCTTTCACTCTCTAG
